

## What You Will Learn

The AIST Crane Symposium is the premier event in the steel and heavy-duty crane industry. A broad range of knowledgeable and experienced crane engineers, builders, mechanics and operators will once again deliver practical information based on actual experience in the form of short presentations to an audience that is 100% involved with and interested in heavy-duty electric overhead cranes.

The goal of this symposium is to present technologies available to upgrade existing electric overhead traveling (EOT) cranes towards Industry 4.0 as well as provide information to make them and their runways the safest, most reliable, durable machinery and equipment in the industry. This two-day program will include presentations focused on safe work practices and ergonomics; electrical, mechanical and structural maintenance techniques; crane inspection technologies; and best practices in EOT crane modernizations.

## Who You Will Meet

Plant maintenance staff; applications, electrical, mechanical, safety, service and design engineers; operations and maintenance personnel and management; and those people who supply parts, equipment and services to the industry. Anyone who has responsibility for cranes and crane service and is interested in improvements and incidents in this area should attend.

## Registration Fees

Advance registration by 1 May 2023: Member US\$895, Non-member US\$1,140. Registration fee after 1 May 2023: Member US\$995, Non-member US\$1,240. Registration includes Monday reception, breakfast and lunch Tuesday and Wednesday, dinner Tuesday evening, and a course workbook or flash drive including presentations.

## Hotel Accommodations

A block of rooms has been reserved at the Sheraton Pittsburgh Hotel at Station Square. Please call the hotel at +1.412.261.2000 by 20 May 2023 to secure the AIST discount rate of US\$159 per night for single/double occupancy.

## Professional Development Hours

This course may qualify for up to 14 Professional Development Hour (PDH) credits. Each attendee will receive a certificate listing the quantity of PDH credits earned for the course. This course is not approved for PDH credit in New York, Florida, North Carolina and Oklahoma.

## Attention Non-Members

Non-member registration fees include membership in AIST through 31 December 2024. Membership is not automatic. A completed membership application must be returned to AIST.

## Organized By

AIST's Cranes Technology Committee.

Association for Iron & Steel Technology  
186 Thorn Hill Road  
Warrendale, Pa., 15086-7528 USA  
+1.724.814.3000 | Fax +1.724.814.3005 | AIST.org



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US\$895 Before 1 May  
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## 29th Crane Symposium

12-14 June 2023

Sheraton Pittsburgh Hotel at Station Square  
Pittsburgh, Pa., USA

AIST.org

## Monday, 12 June 2023

4–6 p.m. **Registration**

5–6 p.m. **Reception**

## Tuesday, 13 June 2023

7 a.m. **Registration and Breakfast**

8 a.m. **Introductions and Opening Remarks**

8:15 a.m. **Crane Technologies — All About Prevention!, Paul Thurber, Everguard.ai**

This presentation will introduce crane-to-crane, crane-to-vehicle and crane-to-worker anti-collision solutions.

8:45 a.m. **Fully Synchronized Tandem Control System for Meltshop Cranes at Nucor Steel–Arkansas, Edgardo La Bruna, Janus Automation; and Gary Furnish and Craig Ward, Nucor Steel Arkansas**

In order to reduce the planned downtime of the electric arc furnaces (EAFs) at Nucor Steel–Arkansas, a state-of-the-art crane control system was implemented to fully synchronize meltshop cranes to be able to move the main EAF assembly from the EAF location to a maintenance area and then move the pre-repaired EAF assembly to the EAF location in one piece. This presentation shows the key items related to the successful implementation of the project.

9:15 a.m. **What Is Industry 4.0 and Are You Ready for It?, Randy Heisler, Life Cycle Engineering**

9:45 a.m. **Break**

10 a.m. **Why Do Crane Runway Girders Fail?, William Vanni, Structural Design Corp.**

Understanding crane runway girder failure is important to answering: Does the electric overhead traveling (EOT) crane cause runway failures or does the runway design cause EOT crane failures? Crane girders are independent structural members and have no other framing to help support large loads. Current structural design practices do not perform an exact torsional or fatigue analysis for unsymmetrical cross-sections. Designing crane runway girders to be fatigue and torsion resistant is critical to structural safety and mill operation.

10:30 a.m. **Alarm Notification System When Moving Hot Molten Steel, Josh Laska, Control Chief**

This presentation will review the positive outcome of a supplier/end user collaboration. Moving molten steel through the factory floor is inherently dangerous. A reliable “moving” alarm notification system to alert personnel in the area is a critical safety requirement. The alarm system must have a high uptime approaching 99.9% (MTBF >7,500 hours and MTTR <2 hours). By bringing wireless technology to bear, an innovative solution will be presented. Of critical importance is a clear understanding of the safety and reliability requirements of the user. To do this effectively, a close working relationship between supplier and user is a must.

11 a.m. **Crane Brake Systems, Safety, Reliability and Maximizing Savings, Juan Parra, JGP Consulting, and Jeff Hourihan, The Hilliard Corp.**

The purpose of this presentation is to inform the attendees of new brake systems and technologies available on the market today that can be used in any of the crane motions, hoist, trolley and bridge drives. Brake systems on overhead cranes are a critical component for the safety of everyone around. It is particularly important to emphasize that manufacturers of brake systems have been working to improve their products and become safer and more dependable for the benefit of the industry.

11:30 a.m. **Cranes and Codes: Are They All the Same?, Glenn Coldiron, DeShazo Crane Co., and Eric Street, Qualified Crane Training & Consulting**

There are multiple types of overhead cranes used in general industry, and just as many misconceptions as to which federal regulation or industry standard applies to each one. This presentation is geared to help clarify some of these misconceptions and open eyes to a new

way of applying industry standards in the steel industry. The presentation will cover questions such as: What is the difference between an industry standard and a federal regulation? What is the difference between federal OSHA, and state-run programs? What cranes does OSHA cover? What industry standards should be applied to each crane type?

Noon **Lunch**

1:15 p.m. **To Safety or Not to Safety? That Is the Question, Mark Sharamitaro, Sharamitaro Industrial Solutions LLC**

This presentation will begin by taking a look at a time a few decades ago when safety was less of a concern as it is today and walk the audience through the years to some high-tech safety systems in place today. The discussion will provide a primer on today's safety standards and show some equipment and its proper implementation.

1:45 p.m. **Crane Runway Girder Connections, Tim Bickel, CSD Structural Engineers**

2:15 p.m. **Break**

2:30 p.m. **Advancement Toward Industry 4.0 in Cranes, Roland Najbar, Siemens Industry Inc.**

3 p.m. **Achieving Lifting Fail-Safety, Yavor Pachov, Siguren Technologies Ltd.**

This presentation will review a new hoist fail-safe solution for industrial crane operations that inherently arrests unsafe hoist motion instantly, regardless of the type of failure, protecting the load, the crane and the plant personnel. It will also discuss the advantages of shifting from reactive safety systems such as monitoring and emergency braking to fail-safe solutions that permit hoist motion only within secure boundaries and safely arrest and hold the load when faults occur.

3:30 p.m. **Break**

3:45 p.m. **Challenges for Overhead Crane Lighting: Causes and Recommended Solutions, Paul Kuester, Dialight**

As newer LED lighting technology becomes available for high-temperature mill applications to save energy, mill safety is still the highest priority. Industry standards are used to set out recommended lighting levels for overhead crane operation areas within the mill. Lighting specifications for general crane areas and specifications for lighting levels within the zone under the crane will be illustrated and provided as part of the presentation. Additionally, integration of smart controls (Industry 4.0) for lighting will be discussed.

4:15 p.m. **Augmented Reality for Training, Eric Almquist, Star Tool & Die Works Inc.**

4:45 p.m. **End of Day Wrap-Up and Adjourn**

5:30 p.m. **Dinner**

## Wednesday, 14 June 2023

7 a.m. **Breakfast**

8 a.m. **Introduction and Opening Remarks**

8:15 a.m. **Safety Upgrades to Overhead Cranes Ensure Vertical Lifts, Steve Lubeck, Laser-View Technologies**

Overhead cranes are the prominent tools for handling dies, coils, and slabs in metals production and downstream processing operations. Safety is compromised once an operator lifts a load without centering the hoist and related rigging. A non-centered pick may result in the load swing excessively once lifted, presenting the possibility for injury. This problem has become more prominent in recent times because operators may have less experience operating equipment. Safety can proactively be improved by the implementation of side load detection with both manual and semi-automatic hook centering guidance. These systems promote safer operator habits because they are forced to center the loads and they experience the benefits of doing so when automatic centering functions are enabled.

8:45 a.m. **The ABCs of Fall Protection, Tucker Burquest, 3M Fall Protection**

This session will cover basics of staying safe while working at height. It will define the ABCs of fall protection (anchors, body harness, connectors, descent and rescue), and discuss proper use, best practices, how and when to inspect equipment, and more.

9:15 a.m. **ASRS Implementation at Coil Storage Bay at Specialty Cold Mill Complex Nucor Steel–Arkansas, Edgardo La Bruna, Janus Automation, and Justin Barnes, Nucor Steel–Arkansas**

This presentation discusses the key aspects of the implementation of a state-of-the-art automated storage and retrieval system at the coil storage bay in Nucor Steel–Arkansas' specialty cold mill complex. Some of the areas covered on the presentation include: safety considerations, seamless integration with other systems, logistics optimization, warehouse management system, diagnostics system, storage capacity optimization, second row storage, intelligent positioning and lessons learned.

9:45 a.m. **Break**

10 a.m. **A Study of an Improved Overhead Crane Wheel Flange Lubrication System — Ten Years Later, Brandon Collins, PhyMet Inc.**

Ten years ago, an improved wheel flange lubrication system employing arc-shaped rigid blocks of microporous polymeric lubricants were installed on 16 crane wheels in an automotive assembly plant. The results of the study will be presented.

10:30 a.m. **Survey Crane Structural System, Mike Falk, Falk PLI**

11 a.m. **Automated Coil Storage Cranes, Thad McClone, Steel Dynamics Inc. – Flat Roll Group Southwest-Sinton Division, and Michael Ryan, Morgan Engineering Systems Inc.**

11:30 a.m. **Life After Email: Technology Update, Ryan Marks, Uesco Cranes, and Matt Bruels, PT Tech LLC**

Noon **Lunch**

1:15 p.m. **Wire Rope — A Complicated Machine, Bobby Hamilton, Mazzella FHS**

1:45 p.m. **Novel Solutions for Crane Vibration Monitoring and Analysis, Brad Kintner, ITR**

2:15 p.m. **Break**

2:30 p.m. **Back to the Future: Laying the Foundations for Crane Automation to Reach New Heights, David Timble, Schneider Electric**

Crane automation is on the rise. Handling several tons of steel (coils, slabs, blooms) safely by crane at high speeds in the yard must take many factors into consideration. How does one prepare a crane to be “automation ready”? What is required for a steel mill crane to become fully autonomous? Learn about the advanced technologies available today to ensure successful implementation of a fully autonomous yard.

3 p.m. **Radio Best Practices, Norm Davis, Magnetek Inc.**

3:30 p.m. **Break**

3:45 p.m. **Tandem Lifts With Safety Components, Kevin Perkins and Tom Rezanka, Rugged Controls**

4:15 p.m. **Safety Improvement Initiatives for EOT Cranes**

4:45 p.m. **Conference Wrap-Up and Adjourn**



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